ICTIOLOGIA

NEW FRESH-WATER FISHES FROM WESTERN COLOMBIA

BY

GEORGE DAHL (1)

The fishes reported upon in this paper were collected in the rivers Atrato, San Juan and Baudó during an investigation forming part of the Plan Decenal de Chocó. The work began on July 31st and ended about Christmas, 1959. Several thousands of specimens, including mainly fishes and aquatic reptiles, were collected by the author, his colleague Dr. Fred Medem, Professor of Herpetology at the Universidad Nacional, and their assistants. The entire fish colection, insofar as it throws light on details of geographic distribution etc., will be reported upon later.

The author wishes to express his thanks to the following persons and entities:

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ORDO OSTARIOPHYSOIDEA

SUB-ORDO NEMATOGNATHOIDEI

Family Cetopsidae

Genus **Pseudocetopsis** BLEEKER 1862

1. — **Pseudocetopsis baudoênsis** spec. nov.

HOLOTYPE: a specimen 106.4 mm. skeletal length, collected at Quitasol, Baudó, November 20th, 1959.

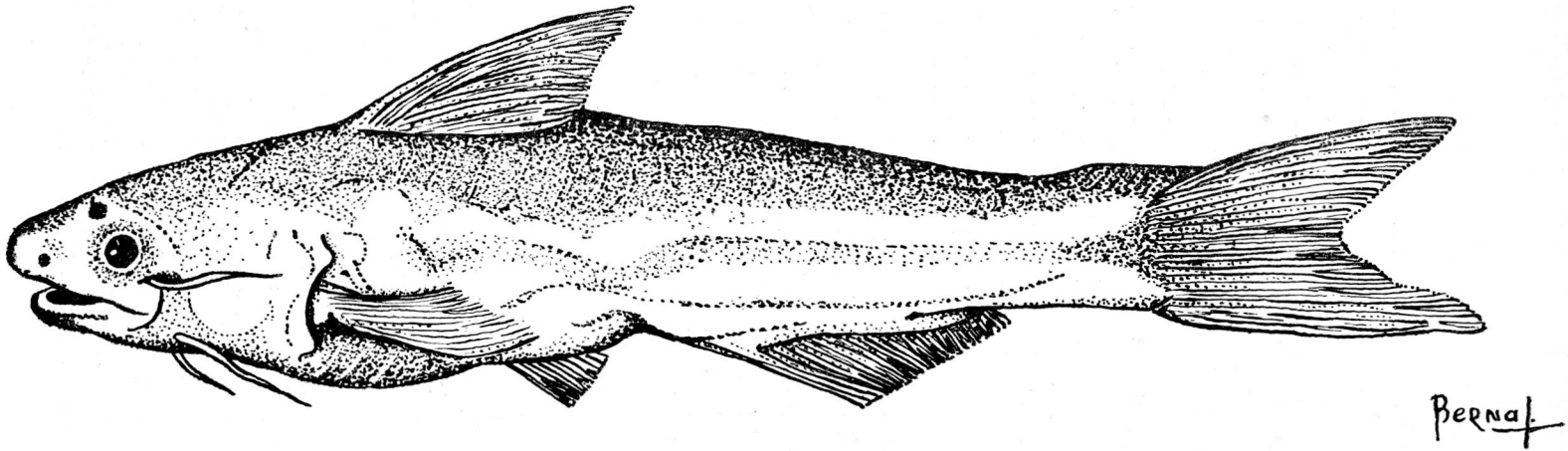
PARATYPES, 6, largest 241 mm., collected at Quitasol and Amparraidó, Baudó, November 20th to 26th, 1959.

DESCRIPTION: Head 3.9- in standard length, greatest depth 5 in standard length. Eye 5½ in head, slightly less than two in interorbital, 1.3 in snout. Distance from snout to dorsal origin 0.78 in length of anal base and 2.9 in standard length. Distance between anterior nares slightly larger than between posterior ones. Snout projecting over lower jaw, so that the mouth is subterminal.

D. i, 6; A. iv, 22; pect. i, 9 - i, 9; pelv. i,5 - i,5, adnate to abdomen for more than half the length of the last ray. Dorsal and pectoral filaments just reaching pelvics.

Body almost cylindrical anteriorly, laterally strongly compressed posteriorly.

The following detailed measures were taken, here expressed in hundredths of skeletal length:



Pseudocetopsis baudoēnsis spec. nov. Holotype

Length of head	25.56
Length of snout	6.11
Vertical diameter of eye	4.70
Interorbital distance	8.93
Width of head at pectoral insertion	16.17
Greatest depth of body	20.00
Distance from point of snout to beginning of dorsal fin	34.11
Distance from point of snout to beginning of anal fin	60.16
« « « « « « anus	55.10
« « « « « « pectoral insertion	25.56
« « « « « « pelvic insertion	42.15
Length of dorsal fin base	13.16
Length of anal fin base	26.70
Length of caudal peduncle	14.19
Least height of caudal peduncle	10.81

DENTITION: Four lines of teeth on premaxillary. On vomer a median line of about 26 teeth, reaching past rictus. On each side an outer line of about four teeth. Lower jaw with 3 series of teeth near symphysis, diminishing to 2 series on the sides and finally to a single series near rictus.

GENERAL COLOR: bluish grey above, yellowish to whitish below. Fins unspotted, hyaline where not fleshy.

This species grows larger than most cetopsids, often reaching a pound or more. At the middle Baudó, where it is rather common, it is locally esteemed as a food fish and is called «anaya». It seems less sluggish than other cetopsids and is often caught on hook and line.

This species is considerably closer to *Ps. othonops* (EIGENMANN) from the Magdalena system than to its geographical neighbour, *Ps. amphyloxa* (EIGENMANN) from the Rivers Atrato and San Juan.

It differs from *Ps. othonops* in the larger head (3.9- in standard length as against 4.5) in having pectoral fins i,9 as against i,8 in *othonops* - this seems to be a very constant character - in having the tail more strongly compressed laterally, in having a second row of teeth on vomer and four lines of teeth on premaxillary instead of two.

From *Ps. amphiloxa* it differs in having iv,22 anal rays as against iv,26, also in having the mouth subterminal, the head larger, and in several other characters.

Family Loricariidae

Sub-family Plecostominae

Genus **Pseudancistrus** BLEEKER 1862

2.— Pseudancistrus atratoênsis spec. nov.

Native name: «Cacucho».

Holotype: a specimen, female, skeletal length 82 mm., collected at Quebrada La Noche, tributary to the upper Atrato, approximate height above sea level 550 m., on August 10th, 1959.

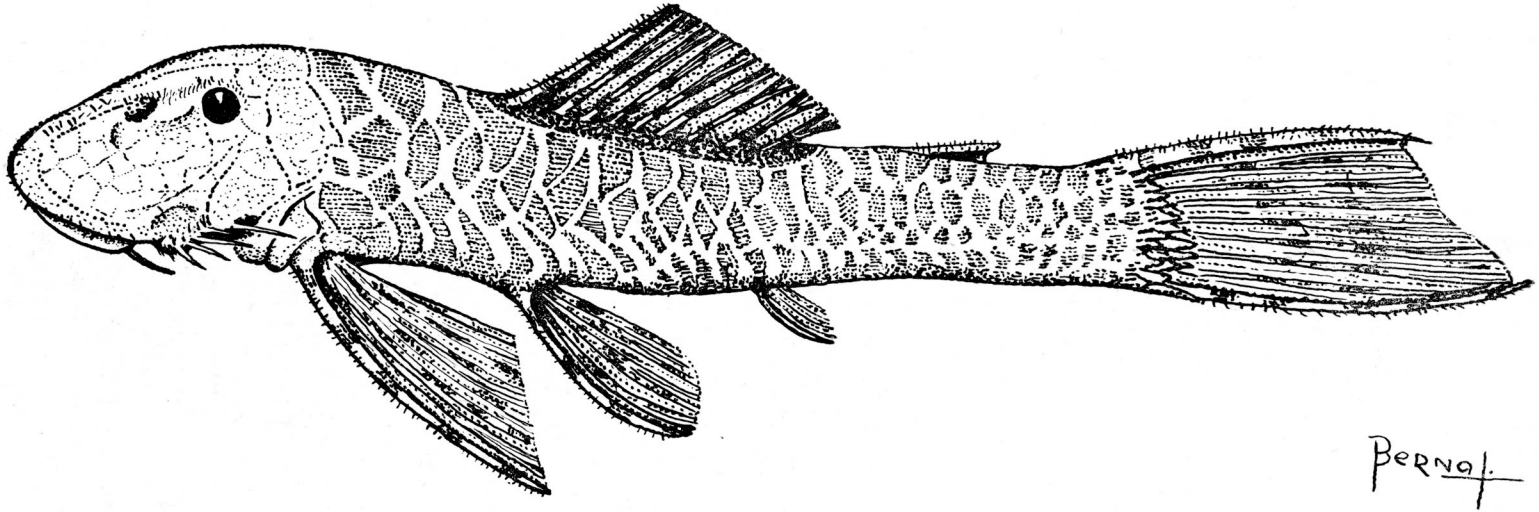
Allotype: a specimen, male, skeletal length 61 mm., same local and date.

Paratypes: 41, same local and date. 7, Quebrada La 16, aprox. 80 m. higher altitude, collected August 11th, 1959.

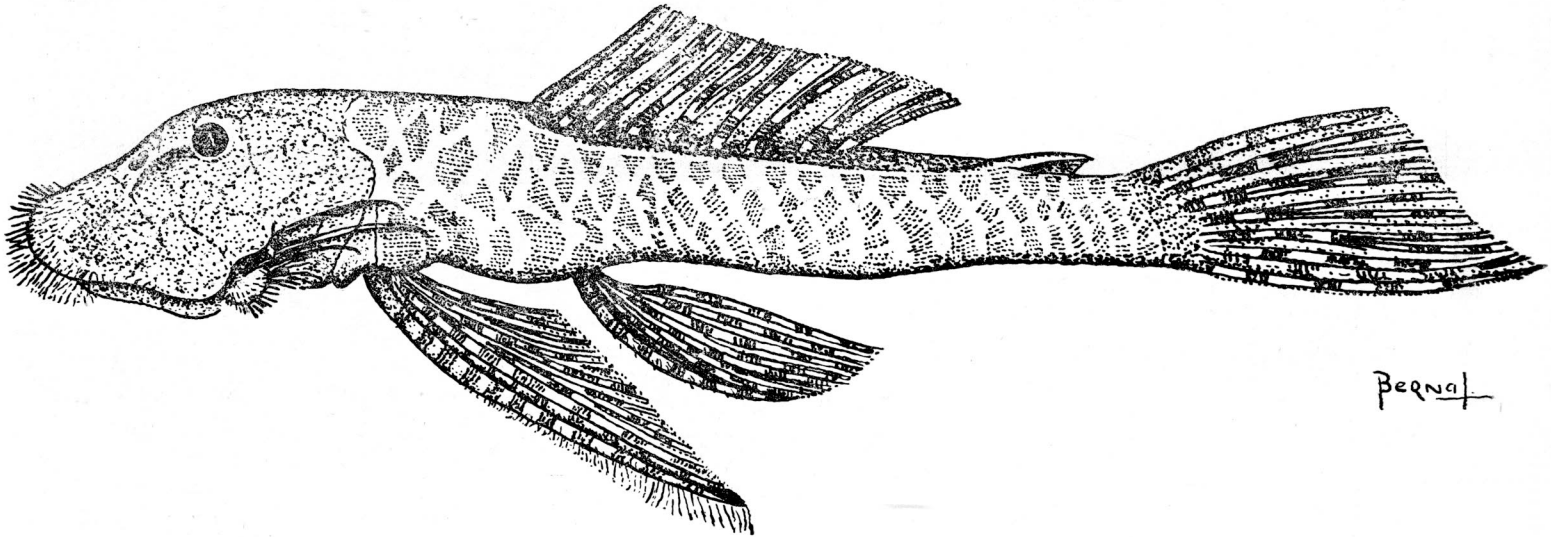
Description of holotype: Length of head from tip of snout to posterior termination of supraoccipital 3.08 in standard length. Greatest depth of body 6.55 in standard length. Vertical eye diameter 9 in length of head, 6 in snout, 2.73 in interorbital distance. Mandibular ramus very slightly less than interorbital distance. Greatest width of head 2/3 in greatest depth. Body very depressed forward, its greatest depth in front of dorsal fin is not quite 1½ least depth of caudal peduncle. Pectoral fins pointed, only the first soft ray about the same length as the spine, which is 4 in standard length; last ray only half as long.

D. I,8; A. I,3; pect. I,6 - I,6; pelv. I,5 - I,5. Longitudinal scutes 26; 10 between anal and caudal, 4 between dorsal and adipose. About 30 spines on interopercle, the longest reaching pectoral insertion. Pectoral spines with very short bristles near distal end, reaching 2/5 of pelvic spines, which just reach beginning of anal fin. Caudal fin obliquely truncate.

Description of allotype: Length of head from tip of snout to posterior termination of supraoccipital 2.71 in standard length. Greatest depth of body 6.77 in standard length. Vertical diameter of eye 7.5 in length of head, 4.83 in snout, 2 in interorbital distance. Mandibular ramus slightly longer than interorbital distance. Greatest width of head 2.2 in greatest depth of body, which is still more depressed than in the holotype.



Pseudancistrus atratoënsis spec. Holotype



Pseudancistrus atratoēnsis spec. nov. Allotype

D. I,8; A. I,3; Pect. I,6 - I,6; Pelv. I,5 - I,5. Lower lateral scutes 23; 9 between anal and caudal, 5 between dorsal and adipose. About 25 spines on interopercle, the longest reaching past third lateral scute. Snout which a great number of bristles, or rather, very slender spines (more than 100) the largest about 4 mm. Sides of head between the short bristles and the opercular spines with a large number of very short bristles.

Pectoral spines bristly, specially so on their distal 1/3. Length of pectoral spine 2.67 in total length. Pectoral fins pointed, pelvics rounded. Pectoral spines reaching almost to tips of pelvic spines, which reach middle of anal. Last dorsal ray reaching past beginning of adipose spine. Pelvic insertions below third and fourth dorsal ray. Caudal obliquely truncate.

Measures taken, expressed in hundredths of skeletal length:

	Holotype	Allotype
Length of head	32.94	36.90
Vertical diameter of eye	3.66	5.52
Length of snout	21.96	23.28
Interorbital distance	10.00	9.84
Length of mandibular ramus	9.76	10.33
Width of head	23.18	32.80
Depth of body	15.25	14.76
Point of snout - beginning of dorsal fin	45.14	46.74
Point of snout - beginning of anal fin	68.32	69.70
Point of snout - beginning of adipose fin	79.91	87.25
Point of snout to anus	58.56	60.68
Point of snout to pectoral insertion	28.06	32.80
Point of snout to pelvic insertion	46.36	51.50
Length of dorsal fin base	23.67	27.88
Length of anal fin base	2.44	2.50
Length of pectoral spine	30.50	37.74
Length of largest interopercular spine	11.00	23.78
Length of caudal peduncle	29.28	27.06
Least depth of caudal peduncle	10.98	11.48

The rims of orbits are not elevated in females; in the males there is a broad ridge from top of snout to outer edges of orbits, the nares being situated on the ridge. The interorbital is flat, the area from eyes to nostrils convex. The mandibular ramus is slightly longer than the interorbital distance in males, slightly shorter in females.

Colour in females dark brown, in males brownish grey; all fins whith numerous dark spots on the rays, the membranes unspotted.

This species would seem to be rather closely related to *Ps. setosus* (BOULENGER). As far as the author is aware, this is the first time any member of the genus *Pseudancistrus* has been found in the Atrato system.

Family Astroblepidae

Genus **Astroblepus** HUMBOLDT 1805

3. — **Astroblepus rengifoi** spec. nov.

Native name: «Capitán».

Holotype: a specimen, skeletal length 44 mm. collected in a small brook, tributary to the Atrato River on the left side, approx. 6 ks. above the town El Carmen de Atrato, on August 8th, 1959.

Paratype: a specimen of 29 mm. skeletal length, same place and date.

Description of holotype: Length of head 3 2/3 in skeletal length. Greatest depth, 6.3 in length. Eye 8 in head, 5.2 in snout, 2.33 in interorbital distance. Length of barbel ½ the length of head; no nasal barbel.

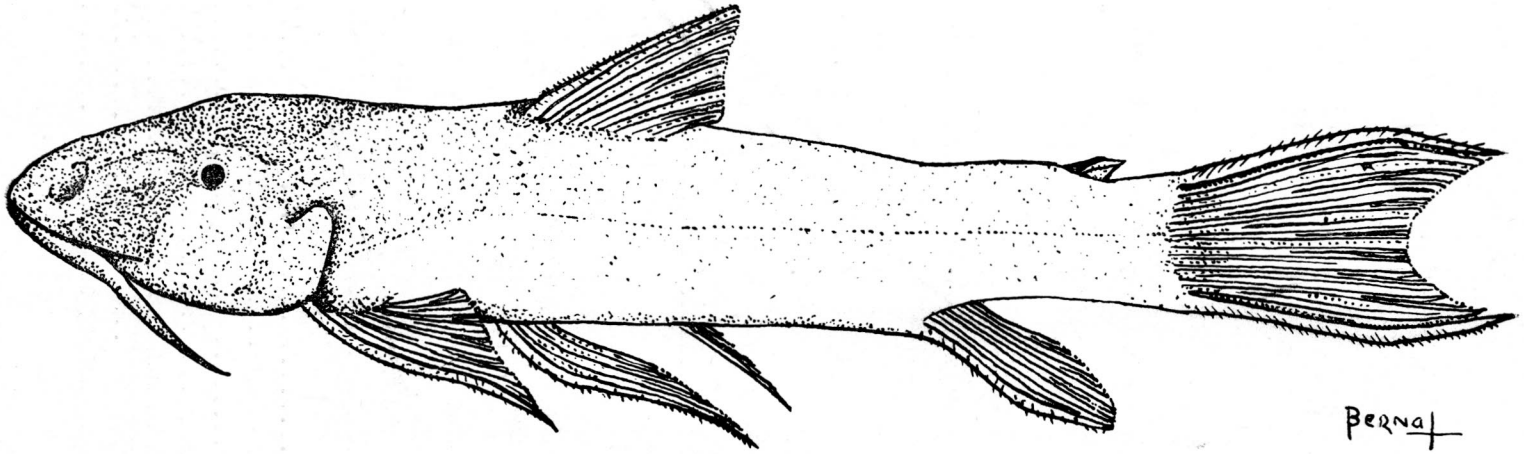
D. I,6; A. I,5; Pect. I,9 - I,10; Pelv. I,4 - I,4. Pectoral spines just reaching pelvics; pelvic tips not reaching anus. Adipose fin a single spine, united by a membrane to the caudal peduncle, not reaching caudal. No preadipose membrane or ridge. Observable lateral pores 23-24.

Upper and lower jaw each with about 6 small pointed teeth on each side of mid-line.

General colour olive brown, faintly mottled with yellowish.

Measures of the holotype, expressed in hundredths of skeletal length:

Length of head	27.24
Vertical diameter of eye	3.41
Length of snout	17.71
Interorbital distance	7.95
Postorbital length of head	12.94
Greatest depth of body	15.89
Point of snout to beginning of dorsal fin	44.27



Astroblepus rengifoi spec. nov. Holotype

Point of snout to beginning of anal fin	78.32
Point of snout to beginning of adipose spine	88.98
Point of snout to anus	65.83
Point of snout to pectoral insertion	26.11
Point of snout to pelvic insertion	42.22
Length of dorsal base	13.62
Length of anal base	4.54
Length of dorsal spine	19.30
Length of anal spine	17.30
Length of pectoral spine	24.52
Length of barbel	13.60
Length of upper caudal spine	27.24
Length of lower caudal spine	27.24
Length of caudal peduncle	20.43
Least depth of caudal peduncle	11.35

This species, the first found in the Atrato system, seems by its single-pointed teeth and its adipose spine to be related to *A. cyclopium* and *A. unifasciatus,* without really being close to either of these species. From its nearest neighbour, *A. cirratus* REGAN from the San Juan River, it differs among other characteristics in the lack of a preadipose membrane and ridge, in the lack of a nasal barbel, the total absence of short spines in the predorsal area, etc.

Named *rengifoi* in honour of Dr. Santiago Rengifo, in recognition of his ceaseles work for the advancement of biological science in Colombia.

SUB-ORDO CHARACINOIDEI

FAMILY CHARACIDAE

Sub-family Bryconinae

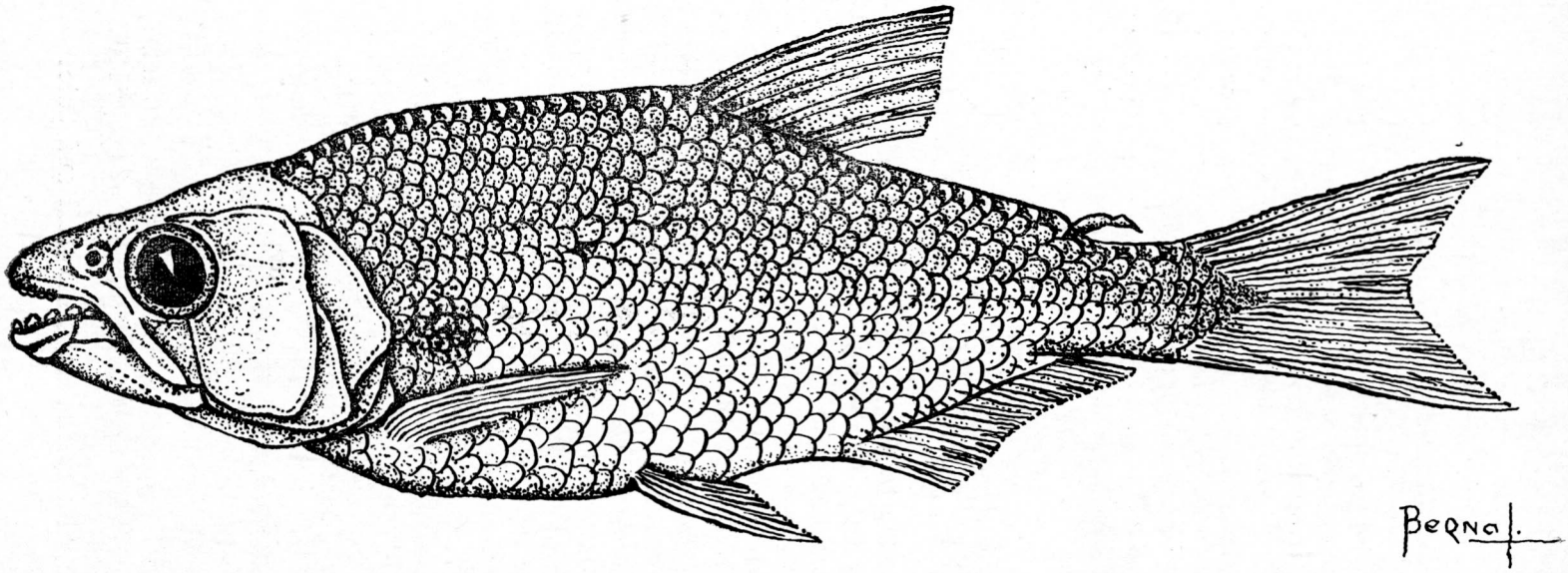
Genus **Brycon** MULLER et TROSCHEL 1844

4. — **Brycon medemi** spec. nov.

Native name: «Sabaleta».

HOLOTYPE: a specimen, skeletal length 110 mm., collected in Quebrada La Noche, upper Atrato, August 9th, 1959.

PARATYPES: 2 specimens, same local and date.



Brycon medemi spec. nov. Holotype

4 specimens, Quebrada Unguía, tributary to lower Atrato, Sept. 18th, 1959.

DESCRIPTION OF HOLOTYPE: Length of head 3½ in skeletal length. Greatest depth 3.2 in standard length. Vertical diameter of eye 4.76 in length of head to edge of opercle, 1.42 in snout, 1.35 in interorbital distance. Body strongly compressed laterally. Base of dorsal fin about ½ the length of anal fin, which is considerably shorter (about 1.4) than head.

D. ii,9: A. iii,25 (iii,26 in one paratype); Pect. i,12 - i,12; Pelv. i,7 - i,7. Scales along lateral line 49 (48 in one paratype); 8 between lateral line and dorsal, 4 between lateral line and pelvic insertion, 20 in front of dorsal fin (19 in one paratype).

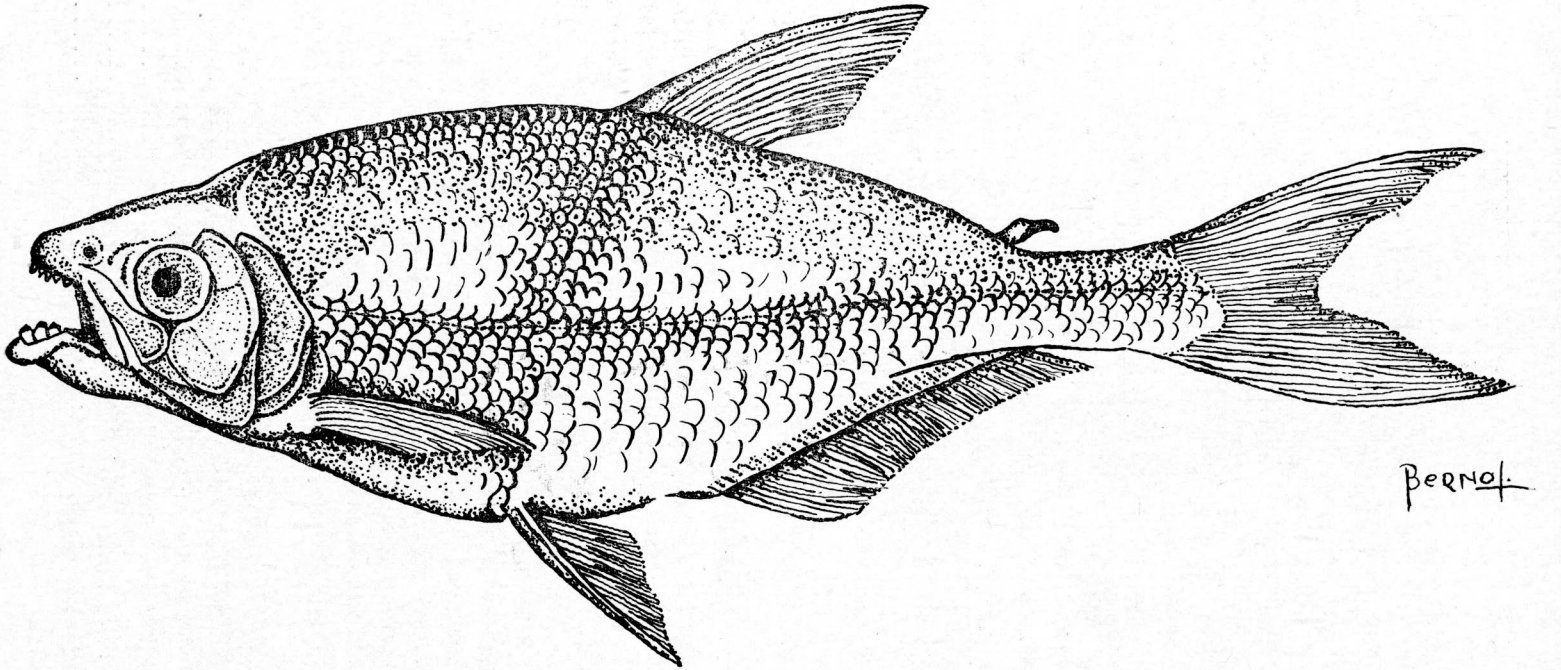
DENTITION: lower jaw with 5 tricuspid, rather blunt teeth on each side of symphysis, the fifth one abruptly smaller (deformed in some specimens). Pair of canines at symphysis small but well-formed. Maxillary with teeth along almost its entire length, about 20, the uppermost 8 somewhat larger and better formed than the lower ones. Premaxillary with about 8 teeth on each side in outer series, about 3 on each side in second, and 7 in third series. Laterally, there are only two series near rictus. Gill-rakers on first arch 8+13.

Colour (in the living specimen); Dack dark, sides silvery (with a more yellowish and duller sheen in the specimens from Unguía), belly white. Caudal spot irregular, not or very faintly continued on the middle caudal rays. A vestigial humeral spot, almost a faint vertical bar in the specimens from La Noche, paling out with increasing size in the larger specimens from Unguía, which have the distal part of the pelvic fins dusky. Anal fin dusky, more so as the specimens increase in size.

The specimens from Unguía, being larger and from less swift water, are generally more robust than those from La Noche.

The following measures were taken on the holotype and on one paratype of 150 mm. skeletal length, from Unguía. They are here expressed in hundredths of skeletal length:

	Holotype	Paratype
Length of head to edge of opercle	31.90	28.00
Vertical diameter of eye	6.73	6.40
Length of snout	9.55	9.00
Interorbital distance	9.10	9.67
Postorbital length of head	14.10	14.40
Greatest depth of body	30.90	36.00



Brycon tovari spec. nov. Holotype

Point of snout to beginning of dorsal fin ..	55.50	.....	58.00
Point of snout to beginning of anal fin	66.36	.....	67.80
Point of snout to beginning of adipose fin..	85.73	.....	86.70
Point of snout to anus	64.09	.....	64.34
Point of snout to pectoral insertion	30.27	.....	26.61
Point of snout to pelvic insertion	51.55	.....	49.02
Length of base of dorsal fin	12.00	.....	12.40
Length of base of anal fin	22.90	.....	24.70
Length of caudal peduncle	16.36	.....	15.34
Least depth of caudal peduncle	9.45	.....	10.60

The dentition and the short anal fin of this species remind of *B. alburnus* (GUNTHER) and *B. atricaudatus* (KNER), but the much lower number of scales and several other characters put it well apart from those.

Named *medemi* in honour of Dr. Fred Medem, Professor of Herpetology at the Instituto de Ciencias Naturales, in recognition of his great contributions to the knowledge of Colombian aquatic reptiles.

5. — **Brycon tovari** spec. nov.

Native name: «Sabaleta blanca».

HOLOTYPE: a specimen, skeletal length 135 mm., collected at the mouth of Rio Sandó, tributary to the Baudó, on November 28th, 1959.

PARATYPE: 4 smaller (immature) specimens from Chigorodó, tributary to Baudó, November 24th, 1959.

DESCRIPCION OF HOLOTYPE: Length of head to edge of opercle 4.22 in skeletal length. Greatest depth of body 3.1 in skeletal length. Vertical diameter of eye 3.2 in length of head, equals length of snout, 1.1 in interorbital distance.

Body strongly compressed laterally. Length of base of dorsal fin 2.7 in length of base of anal fin, which is considerably longer than head.

D. ii,9; A. iii,31; Pect. i,11 - i,11; Pelv. i,7 - i,7. Scales along lateral line 74 - 73. Scales between lateral line and dorsal fin 14, between lateral line and pectoral fin insertion 9, between supraoccipital and dorsal fin beginning 26.

DENTITION: Lower jaw with four tricuspid teeth on each side of symphysis, the last tooth small and weak; followed by very small la-

teral teeth. In the second line one small, canine-like tooth on each side of symphysis. Maxillary with about 10 weak, more or less triangular teeth. Premaxillary with 4 series of teeth, the outer one with about 7 rather weak, tricuspid teeth on each side, followed by three regular lines of teeth, the hindmost one with the largest teeth. Between the first and the second regular row there are 3-4 odd, irregular teeth, that might be understood as a fifth row. The upper jaw projects little if at all.

Gill-rakers on first branchial arch 13+17.

Colour in the living specimen: Adult silvery, with pale bluish back; dorsal, anal and caudal fins slightly dusky. No humeral spot. Caudal spot obsolete, overlaid, very faintly continued on middle caudal rays. Immature specimens have a clearly visible, horizontally elongate, oval to rhomboid black caudal spot, but no humeral spot.

The following measures were taken on the holotype. They are here expressed in hundredths of skeletal length:

Length of head to edge of opercle	23.68
Vertical diameter of eye	7.40
Length of snout	7.40
Interorbital distance	8.14
Postorbital length of head	9.99
Greatest depth of body	32.19
Point of snout to beginning of dorsal fin	54.76
Point of snout to beginning of anal fin	63.64
Point of snout to beginng of adipose fin	85.84
Point of snout to anus	62.16
Point of snout to pectoral insertion	24.79
Point of snout to pelvic insertion	46.17
Length of base of dorsal fin	11.77
Length of base of anal fin	30.71
Length of caudal peduncle	14.06
Least depth of caudal peduncle	9.32

This species is apparently related to *B. striatulus* (KNER), from which it differs in the weak teeth in the lower jaw, the smaller head without strongly projecting upper jaw, and in having three lateral series of premaxillary teeth instead of two, not to mention some smaller characteristics.

Named *tovari* in honour of Dr. Pablo Tovar Borda, of the Universidad Nacional de Colombia.

Sub-family Tetragonopterinae

Genus **Hemibrycon** GUNTHER 1864

6. — **Hemibrycon carrilloi** spec. nov.

Native name: «Sardina».

HOLOTYPE: A specimen 66.7 mm. skeletal length, collected in Quebrada La Noche, tributary to the upper Atrato, Augst 2th, 1959.

PARATYPES: One, skeletal length 48 mm., same local and date as holotype. 3, skeletal lengths 50 mm. 31 mm. and 29 mm., collected at Pavarandó, Baudó system, November 23th, 1959.

DESCRIPTION OF HOLOTYPE: Length of head to edge of opercle 4.22 in skeletal length. Greatest depth of body 2.86 in skeletal length. Vertical diameter of eye 3 1/3 in length of head, 2/3 in length of snout, 1 1/8 in interorbital distance. Base of dorsal fin 1.2 times longer than head; base of anal fin 1¼ times longer than base of dorsal fin. Length of maxillary bone equals diameter of eye. Anal fin beginning on a vertical line from 4th dorsal ray. Caudal fin scaled with much enlarged, almost flat to slightly cupped scales, on both lobes, to more than half its length in holotype (less than half its length in smaller specimens). Ventrals not reaching anal by an eye diameter.

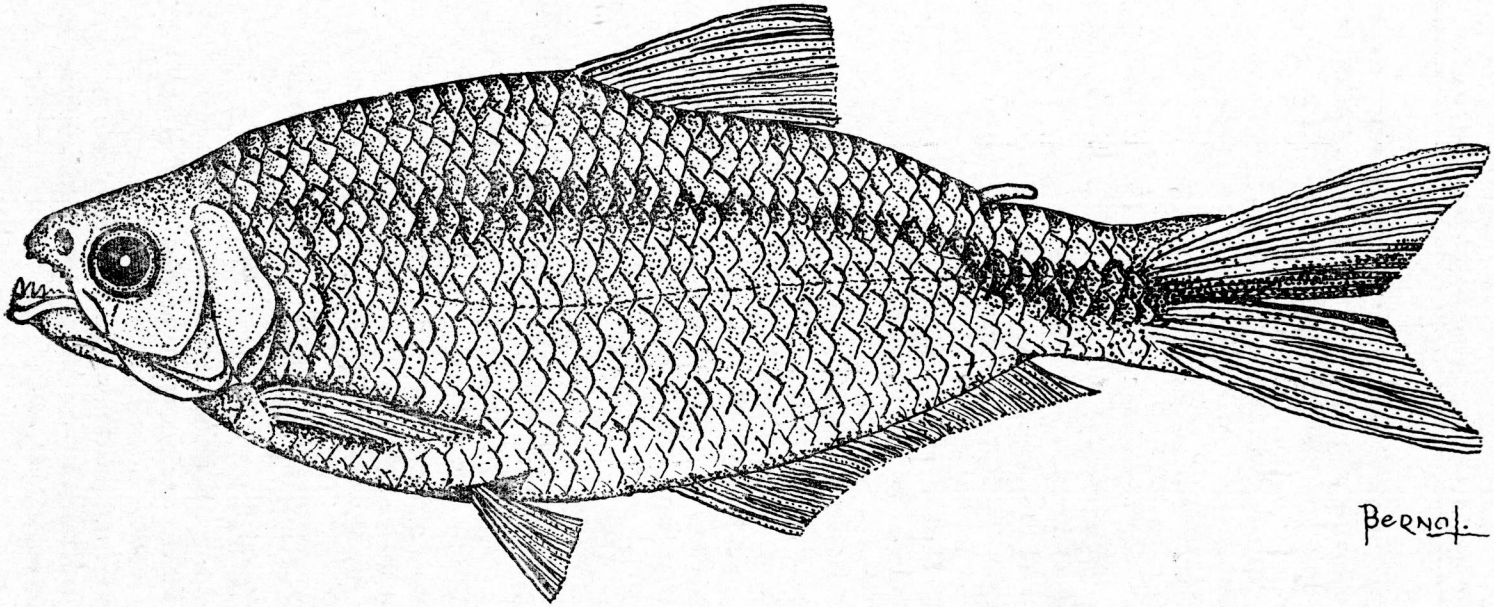
D. ii,7; A. ii,25; Pect. i,11 - i,12; Pelv. i,7 - i,7; 40 scales along lateral line, 7 between lateral line and dorsal fin, 5 between lateral line and pelvic insertion, 14 between supraoccipital and beginning of dorsal fin.

DENTITION: Lower jaw with 4 tricuspid teeth on each side of symphysis, the fourth notably smaller, followed by a series of very small teeth on the side of the jaw.

Maxillary with about 12 tricuspid teeth, the 4 uppermost on the inside and the others on the edge of the bone. Premaxillary with about 5 small teeth on each side in the outer series, and 4 still smaller ones in the inner series.

Gill-rakers on the first branchial arch 7+12 (7+13 in one paratype).

Colour in the living specimen: back bluish, sides brilliant silvery, with a faint and narrow vertical humeral stripe. Caudal spot beginning on middle of caudal peduncle, brilliant black, broadly continued



Hemibrycon carrilloi spec. nov. Holtype

as a band to the ends of the middle caudal rays. Under side white.

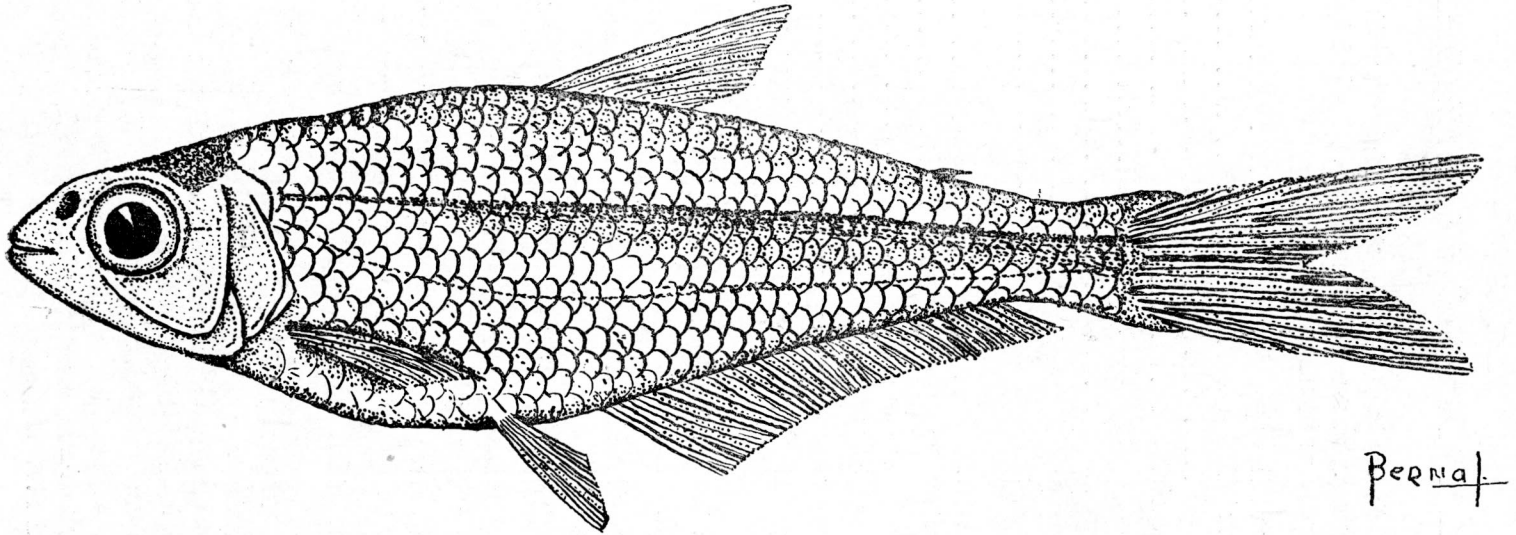
The following measures were taken on the holotype, here expressed in hundredths of skeletal length:

Length of head to edge of opercle	22.50
Vertical diameter of eye	6.75
Length of snout	4.50
Interorbital distance	8.25
Postorbital length of head	10.95
Greatest depth of body	36.30
Point of snout to origin of dorsal fin	49.95
Point of snout to origin of anal fin	60.00
Point of snout to origen of adipose fin	84.00
Point of snout to anus	57.61
Point of snout to pectoral insertion	23.98
Point of snout to pelvic insertion	43.50
Length of base of dorsal fin	27.32
Length of base of anal fin	33.90
Length of caudal peduncle	28.50
Least depth of caudal peduncle	27.00

Reminds to a certain degree of *H. dariensis* MEEK et HILDEBRAND, from which it differs

a) In the length of the maxillary bone, 1.0 in eye diameter instead of 0.7, with 12 teeth instead of 6-10;
b) In the much narrower interorbital space, 1.22 as against 2.8 or more;
c) In the number of longitudinal rows of scales, 15 in *carrilloi* as against 17 in *dariensis*;
d) In having the beginning of anal on a vertical line from 4th to 6th dorsal ray instead of under posterior rays;
e) In having 12 - 13 gill-rakers on the lower branchial arch instead of 10;
f) In the shorter ventrals, not reaching anal fin by an eye diameter instead of just reaching it.

The specimens from Baudo show certain minor differences. The caudal peduncle is slenderer, the anal begins under the 5th or 6th dorsal ray instead of under the 4th. Still, these small discrepancies may well be due to differences in size and age, and anyway seem insufficient for the making of any taxonomic distinction between the two populations.



Bryconamericus multiradiatus spec. nov. Holotype

Named *carrilloi* in honour of Dr. Jorge Carrillo, director of the Fisheries Department in the Colombian Ministry of Agriculture, in recognition of his enthusiastic work in defence of the Colombian fauna.

Genus **Bryconamericus** EIGENMANN 1907

7. — **Bryconamericus multiradiatus** spec. nov.

HOLOTYPE: A specimen of 27 mm. skeletal length, colleted in a small brook in front of the village Riosucio, lower Atrato, on September 8th, 1959.

PARATYPES: 4, approximately the same size, collected at the same place and date as the holotype.

DESCRIPTION OF HOLOTYPE: Length of head to edge of opercle 4.15 in skeletal length. Greatest depth of body 3.5 in skeletal length. Vertical diameter of eye 2.7 in length of head, 0.75 in length of snout, 0.9 in interorbital space. Dorsal base somewhat longer than head, anal base very long, more than 3 times longer than dorsal base, approximately 2 2/3 in standard length.

D. ii,8; A. ii,33; Pect. i,9 - i,9; Pelv. i,7 - i,7. Scales along lateral line 35; between lateral line and dorsal fin 6; between lateral line and pelvic insertion 5; between end of supraoccipital and beginning of dorsal fin 16.

DENTITION: Lower jaw with 3 large and strong tricuspid teeth on each side of symphysis, abruptly followed by much smaller teeth. Maxillary with one or two small tricuspid teeth near upper angle. Premaxillary with 4 tricuspid teeth in outer and 4 in inner series on each side.

Gill-rakers 4+9, on first branchial arch.

Colour, in the living specimen, silvery, with scattered chromatophores on back and tail. No humeral spot. An horizontally oblong caudal spot, continued to end of middle caudal rays.

The following measures were taken on holotype, and are here expressed in hundredths of skeletal length:

Length of head to edge of opercle	24.05
Vertical diameter of eye	8.88
Length of snout	6.66
Interorbital distance	8.14
Postorbital length of head	10.00

Greatest depth of body	28.49
Point of snout to beginning of dorsal fin	48.10
Point of snout to beginning of anal fin	54.02
Point of snout to beginning of adipose fin	81.40
Point of snout to anus	51.43
Point of snout to pectoral insertion	25.90
Point of snout to pelvic insertion	44.77
Length of base of dorsal fin	11.10
Length of base of anal fin	37.37
Length of caudal peduncle	14.80
Least depth of caudal peduncle	9.25

This species seems to be rather remote from all other members of the genus hitherto found in Colombia.

Named *multiradiatus* by reason of the very large number of rays in the anal fin.

Sub-family Rhoadsinae

Genus **Parastremma** EIGENMANN 1913

Key to the species of the genus Parastremma:

a. Vertical diameter of eye 1.8 or more in interorbital distance. Gill-rakers on first branchial arch 6+8, thorn-like teeth on si- of lower jaw 6..... *P. sadina* EIGENMANN

aa. Vertical diameter of eye 1.4 or less in interorbital distance.

b. Gill-rakers on first branchial arch 5+11, thorn-like teeth on sides of lower jaw 3, scales 12/57 - 59/11... *P. alba* spec. nov.

bb. Gil-rakers on first arch 8 - 13; thorn-like teeth on side of lower jaw 5, scales 11/63-64/8... *P. pulchra* spec. nov.

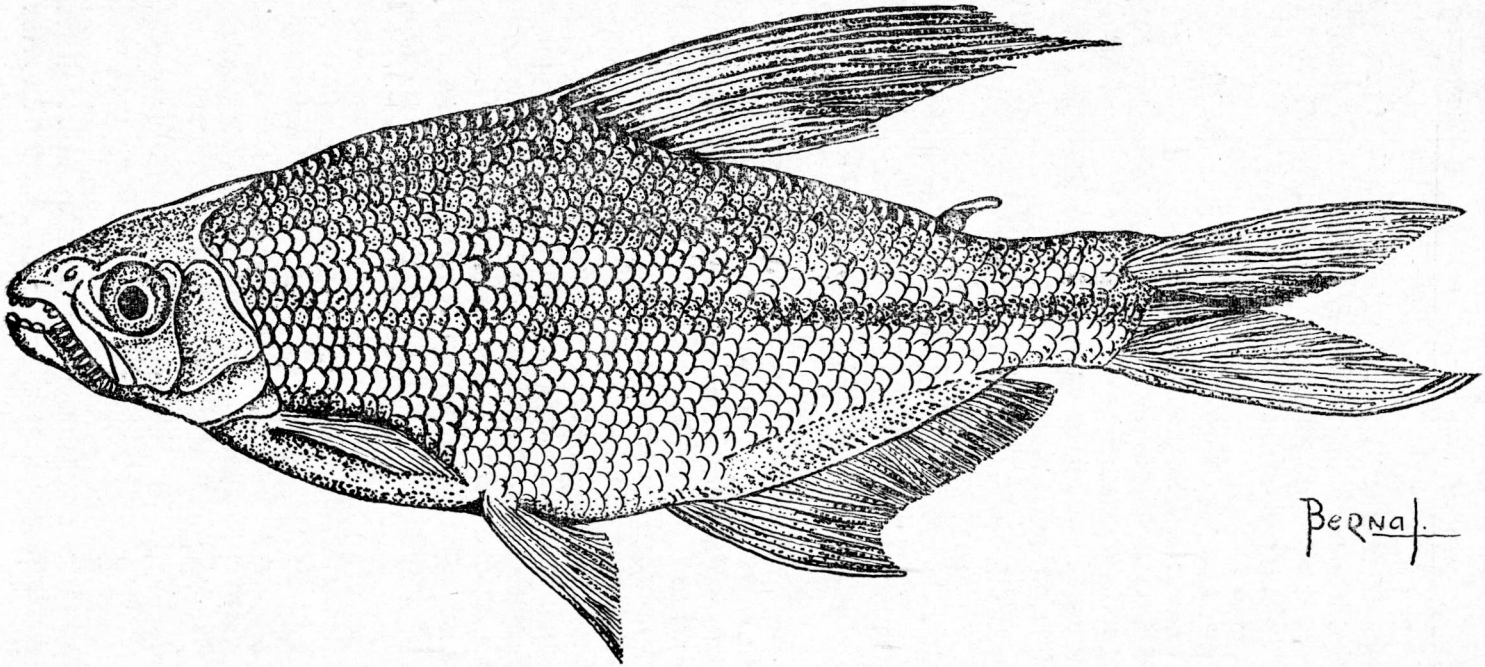
8. — **Parastremma pulchra** spec. nov.

Native name: «Sardina».

HOLOTYPE: a specimen of 100 mm. skeletal length, collected at Becordó, Rio San Juan, on November 7th, 1959.

PARATYPE: one, skeletal length 53 mm., collected at Noanamá, San Juan, on November 8th, 1959.

DESCRIPTION OF HOLOTYPE: Length of head in skeletal length 4 1/6. Greatest depth of body in skeletal length 3. Vertical diame-



Parastremma pulchra spec. nov. Holotype

ter of eye 3.85 in length of head, 1.23 in length of snout, 1.4 in interorbital distance. Body robust. Dorsal fin rays much prolonged, the 2nd and 3rd longest, reaching caudal fin. Adipose well developed, its proximal part a fleshy lobe, its distal part membranaceous, semitransparent.

D. ii,8; A. iii,28; Pect. i,13 - i,12; Pelv. i,7 - i,7. Scales along lateral line 63; scales between lateral line and dorsal 11, between supraoccipital and beginning of dorsal fin 25. Dorsal base short, 1.71 in length of head; anal base rather long, 1.4 times length of head. Longest dorsal ray slightly more than ½ of skeletal length.

DENTITION: Lower jaw, on each side of symphysis, with 5 well-developed, 7-pointed teeth, then one smaller tricuspid tooth, followed on the elevated part of the side of jaw by 5 strong, backward-curved, single-pointed, thorn-like teeth, the third strongest. Maxillary with 2 small tricuspid teeth at the upper angle and 14 strong, spike-like teeth along its edge. Premaxillary on each side with 2 single-pointed, slightly backward-curved teeth in outer line, penetrating lip; inner line with 5 seven-pointed teeth on each side.

Gill-rakers on first branchial arch 8+13.

Colour, in the living specimen: silvery, back darkish along midline. No humeral spot. No caudal spot. Rays of dorsal, mid-caudal and anal dusky, specially on distal parts. No lateral streak.

The paratype differs in having a well-defined roundish black caudal spot, and the fins are not dusky. There are very faint signs of two vertical humeral spots. The dorsal rays are not yet prolonged. This specimen is immature. The holotype is a male.

The following measures were taken on holotype, and are here expressed in hundredths of skeletal length:

Length of head to edge of opercle	24.0
Vertical diameter of eye	6.5
Length of snout	8.0
Interorbital distance	9.0
Postorbital length of head	10.0
Greatest depth of body	34.0
Point of snout to dorsal fin beginning	49.5
Point of snout to beginning of anal fin	60.5
Point of snout to beginning of adipose fin	81.5
Point of snout to anus	58.0
Point of snout to pectoral insertion	25.0
Point of snout to pelvic insertion	45.1

Length of base of dorsal fin	14.0
Length of base of anal fin	33.7
Length of caudal peduncle	11.0
Least depth of caudal peduncle	11.0
Longest dorsal ray	51.4

Named *pulchra* because of its elegant form.

9. — **Parastremma alba** spec. nov.

Native name: «Blanca».

HOLOTYPE: A male specimen, skeletal length 95 mm., from Río Sandó, Baudó, collected November 29th, 1959.

ALLOTYPE: a female specimen, skeletal length 80 mm., from Chigorodó, Baudó, collected November 24th, 1959.

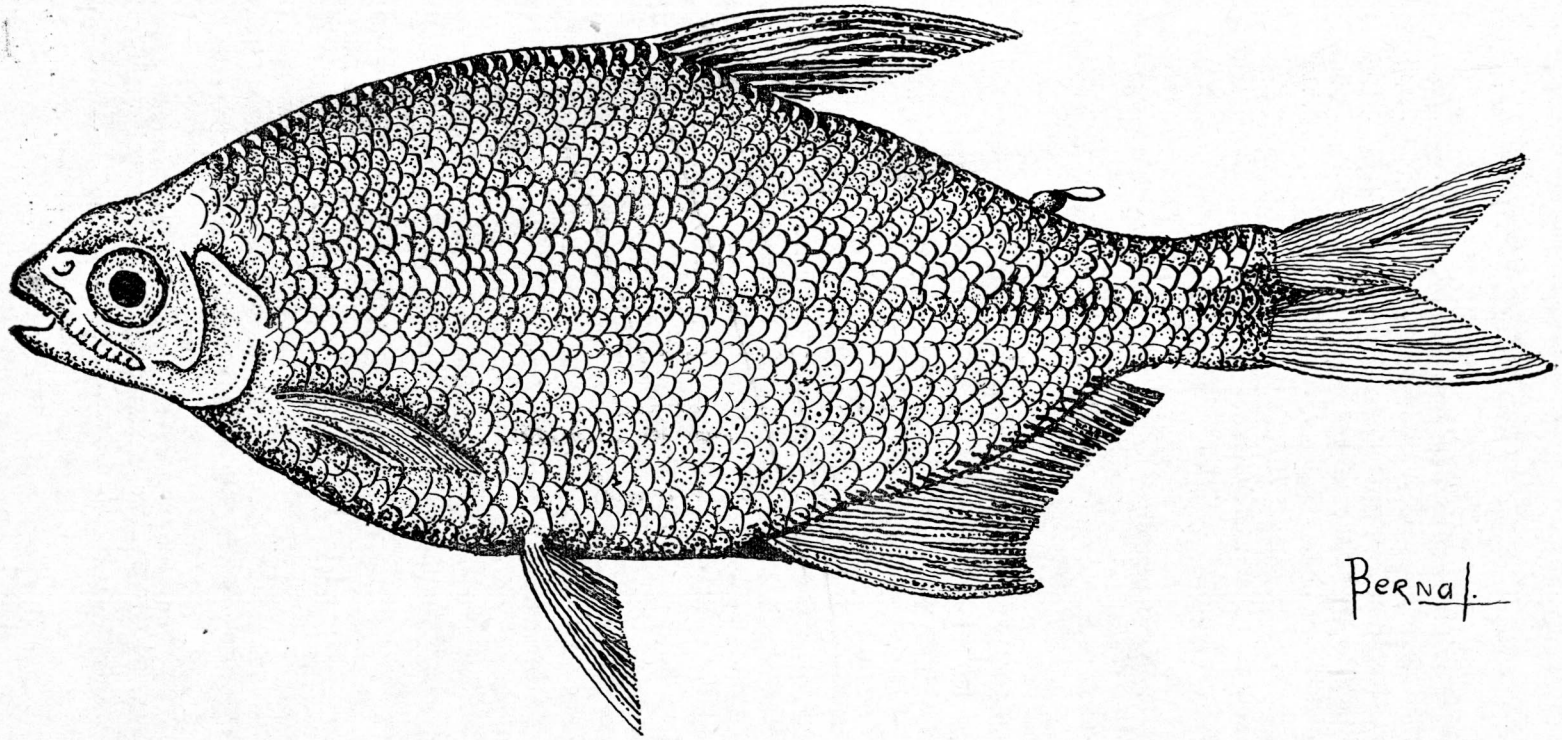
PARATYPE: one, skeletal length 93 mm. same place and date as holotype.

DESCRIPTION OF HOLOTYPE: Length of head to edge opercle 4 1/6 in total length. Greatest depth of body approx. 2 ½ in total skeletal length. Vertical diameter of eye 2.86 in length of head, equal to length of snout, 1.11 in interorbital distance. Body much compressed laterally. Adipose fin as in *P. pulchra*. Dorsal rays little prolonged.

D. ii,8; A. iii,28; Pect. i,13 - ? (damaged); Pelv. i,7-i,7. Dorsal base short, 1.64 in length of head 2.35 in length of dorsal base. Scales along lateral line 58, between lateral line and dorsal fin 12, between lateral line and pelvic fin insertion 11, between supraoccipital and beginnning of dorsal fin 24. The slightly prolonged dorsal rays do not reach adipose fin.

DENTITION: Premaxillary with 2 teeth on each side in outer line. These teeth are curved, single-pointed, penetrating lip. Inner line with 6 rounded seven-pointed teeth on each side of mid-line. Maxillary with 2 smaller, 7-pointed teeth near upper angle and 10 small, single-pointed teeth along its border. Lower jaw with 6 seven-pointed, broad teeth on each side of symphysis, followed by 3 rather strong, backward-curved, single-pointed, thorn-like teeth on raised side of jaw.

Coloration; two vertical, extremely faint humeral spots; caudal spot irregular, overlaid. No lateral streak. Unpaired fins dusky.



Parastremma alba spec. nov. Holotype

ALLOTYPE: differs from holotype in the following: eye in interorbital distance 1.2; greatest depth of body 2.35 in skeletal length. The dorsal rays are not prolonged. Pectoral fin rays i,11 - i,11; lateral line scales 59; predorsal scales 25.

Gill-rakers in both specimens 5+11.

The allotype has the vertical humeral spots somewhat more pronounced, a round black caudal spot, not continued on middle caudal rays, and a faint dark lateral streak. Fins hyaline. Dentition as in holotype.

The following measures were taken and are here expressed in hundredths of skeletal length:

	Holotype	Allotype
Length of head to edge of opercle	24.05	23.75
Vertical diameter of eye	8.40	8.00
Length of snout	8.40	8.00
Interorbital distance	9.35	9.81
Postorbital length of head	10.82	10.00
Greatest depth of body	40.11	42.51
Point of snout to origin dorsal fin	53.03	55.00
Point of snout to origin of anal fin	61.58	55.00
Point of snout to adipose fin origin	82.68	87.50
Point of snout to anus	58.21	58.75
Point of snout to pectoral fin insertion	24.84	25.00
Point of snout to pelvic fin insertion	44.63	46.00
Length of base of anal fin	34.60	35.25
Length of base of dorsal fin	14.70	15.65
Length of caudal peduncle	9.45	10.25
Least depth of caudal peduncle	11.03	12.00
Longest dorsal ray	28.35	27.50

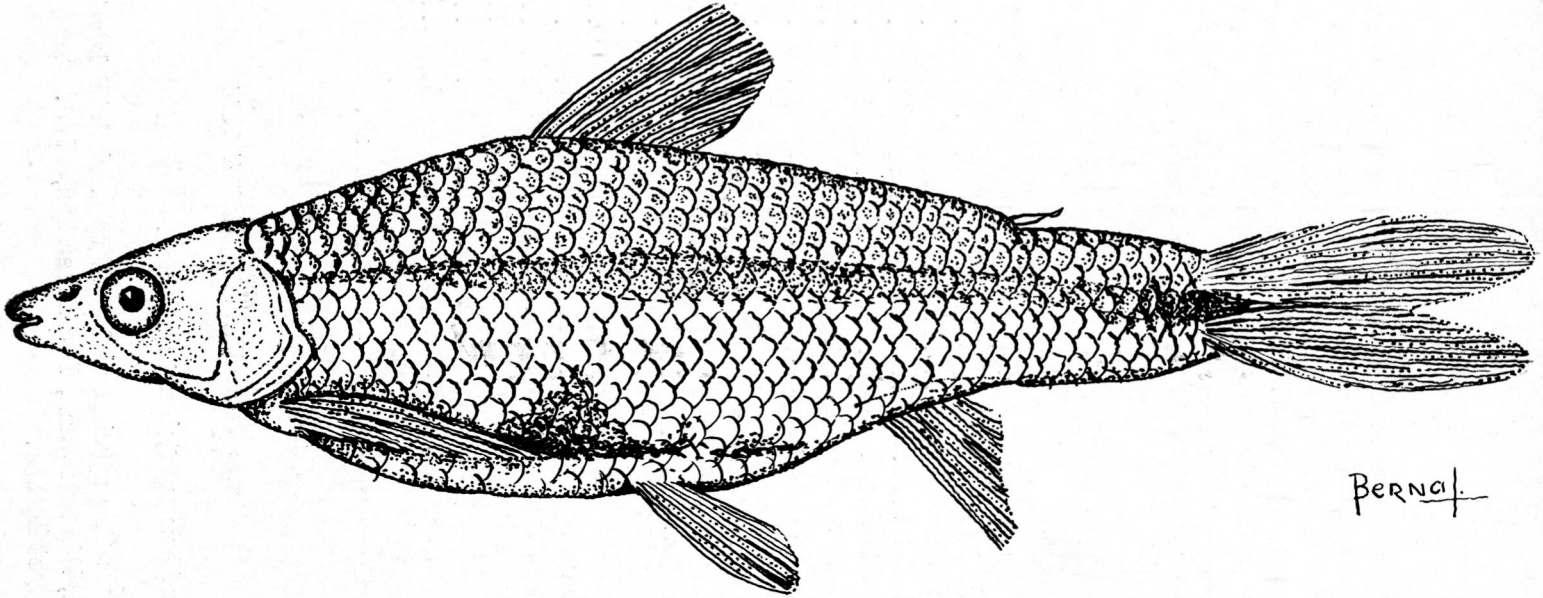
Named *alba* because of its whitish sheen when taken out of the water; is is called «blanca» by native fishermen.

Sub-family Nanostomatinae

Genus **Characidium** REINHARDT 1866

10. — **Characidium sanctjohanni** spec. nov.

HOLOTYPE: One specimen of 46.5 mm. skeletal length, collected at Noanamá, Río San Juan, November 3rd, 1959. This is the only specimen as yet known.



Characidium sanctjohanni spec. nov. Holotype

DESCRIPTION: Length of head to edge of opercle 4.23 in skeletal length. Greatest depth of body 3.6- in skeletal length. Vertical diameter of eye 3.3. in head, equal to length of snout, 0.9 in interorbital. Rather robust. Mouth terminal, teeth with a lateral lobe.

D. ii,9; A. ii,8; Pect. iii,8 - iii,8; Pelv. i,8 - i,8. Scales along lateral line 37; between lateral line and dorsal fin 4 ½; between lateral line and pelvic fin insertion 4 ½; between supraoccipital and beginning of dorsal fin 11. Gill-rakers obsolete.

COLOUR: back dark, sides yellowish. A rather faint dark longitudinal bar, continued on head; crossed by ten darker vertical stripes. A dark spot on caudal peduncle, not continued on caudal rays. Dorsal and caudal dusky.

The following measures were taken, here expressed in hundredths of skeletal length:

Length of head to edge of opercle	23.76
Vertical diameter of eye	7.13
Length of snout	7.13
Interorbital distance	6.26
Postorbital length of head	12.36
Greatest depth of body	29.16
Point of snout to begininng of dorsal fin	45.79
Point of snout beginning of anal fin	73.44
Point of snout to beginning of adipose fin	82.94
Point of snout to anus	70.85
Point of snout to pectoral insertion	20.72
Point of snout to pelvic insertion	53.35
Length of base of dorsal fin	15.36
Length of base of anal fin	9.32
Length of caudal peduncle	19.44
Least depth of caudal peduncle	12.10

This form is close to *Characidium caucanum* EIGENMANN, from which it differs in having more rows of scales; 37 longitudinal as against 32-35, 9 vertical against 7-7½; also in having only 2 undivided rays in dorsal and anal fin instead of 3. The head is also smaller. It is possible that, when a more ample material can be studied, this will be found to represent a geographical subspecies of *Ch. caucanum*.

As far as the author is aware, this is the first time that any member of the genus *Characidium* has been found in the Pacific dra-

inage of Colombia. *Ch. fasciatum* LUTKEN is not uncommon in the Atrato.

Named *sanctjohanni* for the San Juan River

ORDO PERCOMORPHOIDEA

SUB-ORDO PERCOIDEI

Family Cichlidae

Genus **Cichlasoma** SWAINSON 1833

11. — **Cichlasoma microlepis** spec. nov.

Native name: «Mojarra rosada».

HOLOTYPE: a specimen, 188 mm. skeletal length, collected at Pavarandó, Baudó, November 23rd, 1959.

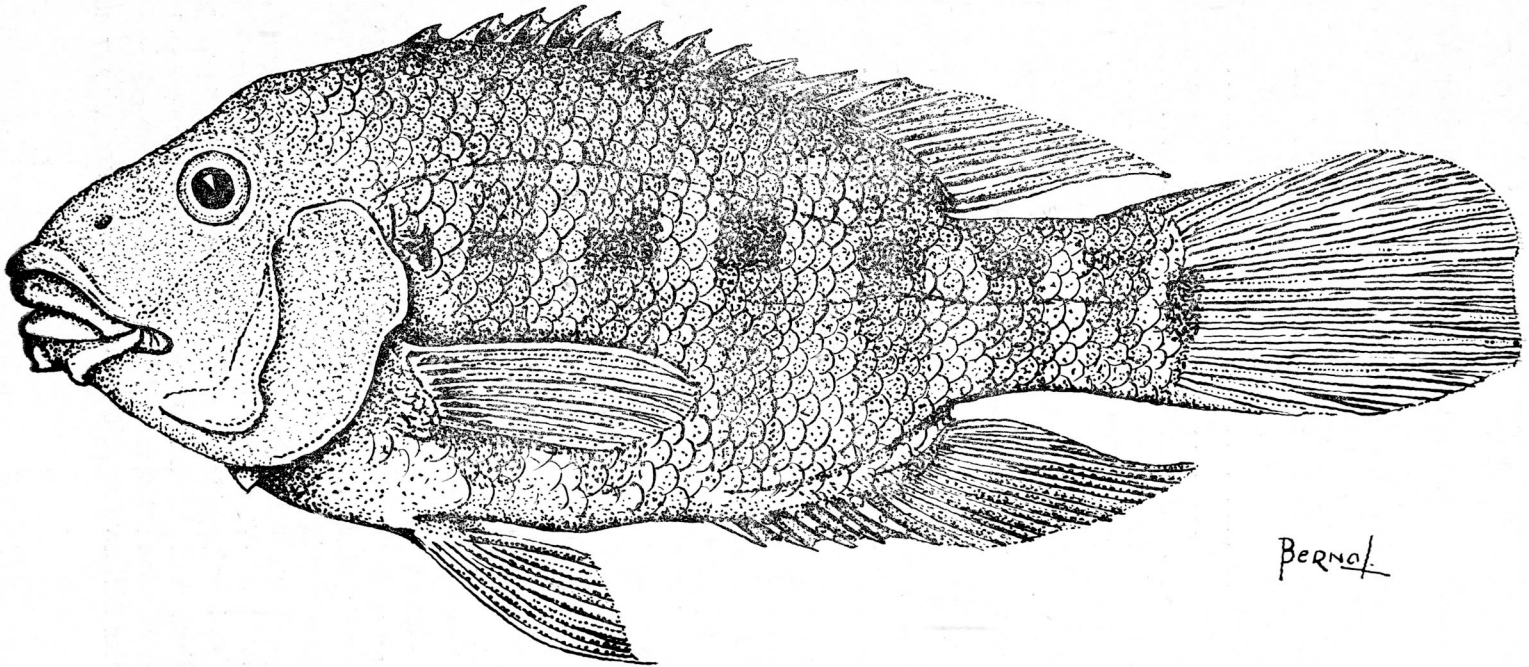
PARATYPE: One, skeletal length 158 mm., same place and date.

DESCRIPTION OF HOLOTYPE: Length of head in skeletal length 3.1. Greatest depth of body 2.33 in skeletal length. Vertical diameter of eye 5 in length of head, 2.44 in length of snout, 2 in interorbital distance. Body robust, laterally compressed, dorsal profile more convex than ventral.

D. XVI,12 (XV,13); A. V,9 (V,9); Pect. ii,15 - ii,15 - (i,15 - i,15); Pelv. I,6 - I,6 (I,6 - I,6). Scales in a lateral series 52 (50); scales between upper lateral line and soft dorsal 5 (5); scales between bentdown point of upper lateral line and lower lateral line 4 (4).Numbers within brackets refer to paratype. Pelvic spine with a soft prolongation, somewhat longer than spine.

Teeth conical, those in the middle of the upper jaw largest, yellowish with dark brown points. Gill-rakers 3+9 (3+9) on the first branchial arch. Lower lip very broad, reversed, its reversed part about 2/3 as broad as eye. Caudal fin truncate-rounded.

Colour, in the living specimen: back and sides mottled bronze, with many narrow, wavy lines of bright red to rose longitudinally along sides, between groups of striae on scales; under parts mostly bright red. Sides with 6 darkish cross-bands. A large black spot, considerably larger than eye, under last hard spines of dorsal; in front of it smaller, partly confluent spots to upper edge of opercle. A



Cichlasoma microlepis spec. nov. Holotype

small, ill-defined, vertical black spot at base of caudal. Pectoral fins plain, roseate in the living specimen; all other fins mottled.

The following measures were taken on the holotype, here expressed in hundredths of skeletal length:

Length of head to edge of opercle	32.24
Vertical diameter of eye	6.65
Length of snout	16.22
Interorbital distance	13.40
Postorbital length of head	13.83
Greatest depth of body	42.99
Point of snout to beginning of dorsal fin	41.76
Point of snout to beginning of anal fin	65.96
Point of snout to anus	61.70
Point of snout to pectoral insertion	33.67
Point of snout to pelvic insertion	40.16
Length of base of dorsal fin	58.51
Length of base of anal fin	23.24
Length of caudal peduncle	17.87
Least depth of caudal peduncle	14.36
Width of reversed part of lower lip	4.36
Length of soft prolongation of pelvic spine	18.08

This species is very easily distingushed from all other Colombian and Panaman members of the genus *Cichlasoma* by reason of the very small scales, 50 or more in a longitudinal series. Most of the species have about 30-32 scales; only *C. tuyrense* MEEK et HILDEBRAND, from the Tuyra and Bayano basins of Panama, has as many as 40 scales between the edge of the opercle and the base of the caudal fin.

Named *microlepis* by reason of its very small scales.

Resumen

Los peces aquí descritos forman parte de una colección hecha en los ríos Atrato, San Juan y Baudó, en el Departamento del Chocó, durante la segunda mitad del año 1959. Varios miles de peces fueron recolectados, como parte de los estudios ictiológicos hechos para el plan decenal del Chocó. La colección se halla todavía en estudio, y una obra más extensa sobre ella se publicará más tarde. Aquí se describen once formas nuevas, descubiertas durante el estudio. El autor expresa su agradecimiento para con las personas y entidades quienes hicieron posible la investigación científica y colabo-

raron en diferentes modos para obtener los resultados. Cuatro de las especies nuevas para la ciencia han sido dedicadas a ciudadanos colombianos de notable mérito en el avanzamiento de los conocimientos biológicos en Colombia: Dr. Fred Medem, Dr. Santiago Rengifo y Dr. Pablo Tovar Borda de la Universidad Nacional de Colombia, y Dr. Jorge Carrillo, Director del Departamento de Piscicultura, Pesca y Caza del Ministerio de Agricultura.

Bibliography

BOULENGER, G. A.

1877.— On New Siluroid Fishes from Colombia. Ann. Mag. Nat. Hist. London, (5) XIX, pp. 348-350.

BOULENGER, G. A.

1902.— Description of Two New Fishes of the Genus *Loricaria*. Ann. Mag. Nat. Hist. London (7) IX, pp. 69-71.

BOULENGER, G. A.

1911.— Description of Three New Characinid Fishes from Southwestern Colombia. Ann. Mag. Nat. Hist. London (8) VII, pp. 212-213.

DAHL, G.

1958.— Los peces del Río Sinú. Informe preliminar. Secr. Agricultura. Montería. Junio 1958.

EIGENMANN, C. H. et
OGLE F.

1907.— An Annotated List of Characin Fishes in the United States National Museum and in the Museum of Indiana University, with Descriptions of New Species. Proceedings U. S. Mus. XXXIII, 1907, pp. 1-36.

EIGENMANN, C. H.

1912.— Some Results of an Ichthyological Reconnaisance of Colombia. Part. I. Indiana Univ. Studies No. 16, 1912.

EIGENMANN, C. H.

1913.— Some Results of an Ichthyological Reconnaisance of Colombia. Part. II. Indiana Univ. Studies No. 18. 1913.

EIGENMANN, C. H.

1916.— New and Rare Fishes from South American Rivers. Ann. Carnegie Mus. X, 1916, pp. 77-80.

EIGENMANN, C. H.

1917.— Eighteen New Species of Fishes from Northwestern America. Proceedings Amer. Phil. Soc. LVI, 1917, pp. 673-689.

EIGENMANN, C. H.

1920.— The Fishes of the Rivers Draining the Western Slope of the Cordillera Occidental of Colombia. Indiana Univ. Studies No. 46, 1920.

EIGENMANN, C. H.

1922.— The Freshwater Fishes of Northwestern South America. Memoirs Carnegie Mus. Pittsburg, Vol. IX, No. 1.

EIGENMANN, C. H.
et MYERS, G. S.

1917-1929.— The American Characidae. Mem. Mus. Comp. Zool. Harvard. Vol. XLIII, Parts I-V.

HILDEBRAND, S. F.

1938.— A New Catalogue of the Fresh-water Fishes of Panama. Field Mus. Nat. Hist. Chicago, Zool. Series, Vol. XXII, No. 4.

MEEK, S. E. et
HILDEBRAND, S. F.

1916.— The Fishes of the Freshwaters of Panama. Field Mus. Nat. Hist. Chicago, Zool. Series, Vol. X, No. 15.

MILES, CECIL

1947.— Los Peces del Río Magdalena. Min. Economía Nacional, Bogotá, 1947.

REGAN, C. T.

1913.— The Fishes of the San Juan River, Colombia. Ann. Mag. Nat. Hist. London, (8) XII.

1914.— Fishes from the Condoto River, Colombia. Ann. Mag. Nat. Hist. London, (8) XIV.